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[54] **THERMAL/ENVIRONMENTAL BARRIER COATING SYSTEM FOR SILICON-BASED MATERIALS**

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[57] **ABSTRACT**

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428/702; 428/469; 428/472

[58] **Field of Search** 428/408, 432,
428/457, 469, 472, 688, 689, 698, 699,
701, 702; 501/88, 8, 32, 89

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A coating system for a substrate containing a silicon-based material, such as silicon carbide-containing ceramic matrix materials containing silicon carbide and used to form articles exposed to high temperatures, including the hostile thermal environment of a gas turbine engine. The coating system includes a layer of barium strontium aluminosilicate (BSAS) as a bond coat for a thermal-insulating top coat. As a bond coat, the BSAS layer serves to adhere the top coat to a SiC-containing substrate. The BSAS bond coat exhibits sufficient environmental resistance such that, if the top coat should spall, the BSAS bond coat continues to provide a level of environmental protection to the underlying SiC-containing substrate.

20 Claims, 1 Drawing Sheet

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